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ABSTRACT

During the summer of 1982, 218 randomly-selected migrant farmworkers in Wayne County, New York were interviewed to determine the significant factors affecting use of health services among migrant farmworkers. Three groups were identified: immigrants, recent migrants, and long-term migrants. Medical utilization patterns, use of community medical services, types of health problems for which medical treatment had been delayed, reasons for the delay, and the migrant's subjective assessment of quality of community health care were compared among the three groups. A multiple regression model examined determinants of physician visits. The 113-item survey instrument covered individual and family characteristics, health habits and attitudes, health status, utilization of health services, home community characteristics, and the current resident's physical environment. Findings included that immigrants visited physicians less often; female migrants visited doctors more often; medical treatment was usually delayed due to fear of medical practices and disbelief in the medical profession; and lack of time and lack of access were reasons often cited for not seeking health care. Results indicated that the provision of comprehensive health programs, removal of structural barriers in the health delivery system, and a program of migrant health education are necessary to alter the medical utilization behavior of migrant farmworkers. (NQA)

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Medical Utilization Patterns of Migrant Farm Workers in Wayne County, New York

by

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Presented at the annual meeting of Rural Sociological Society
College Station, Texas
August 22-25, 1984

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Abstract

A representative sample of 218 migrant farm workers was randomly drawn in Wayne County, New York during the summer of 1982. Three distinct migrant groups were identified: immigrants, recent migrants and long-term migrants. Medical utilization patterns, including physician visits, and use of medical services in the community health center, were compared among the three migrant groups. The determinants of physician visits were examined in a multiple regression model. The focus was also placed on types of health problems for which medical treatment had been delayed, and the reasons for the delay were clearly identified. Furthermore, this study examined migrants' subjective assessment of quality of health care in the community.

The results of this study indicate that the provision of comprehensive health programs, removal of structural barriers in the health delivery system, and a program of migrant health education are the necessary steps to alter the medical utilization behavior of migrant farm workers.

Although migrant farm workers have attracted considerable attention among researchers in recent years, the subjects of health care and health status as related to this group have not been systematically studied. In the Northeast, the large majority of previous studies of migrant workers have focused primarily on migration streams and characteristics of migrants (Larson and Sharp, 1959; Friedland and Nelkin, 1971; Young et al., 1979). Studies in other regions on migrant health care can generally be characterized into two types. The first type tends to center around providers of health services and comparisons of the relative quality, coverage and costs of medical services between migrant clinics and private physicians (Chapman, 1964; Harkness and Dougherty, 1968; Rudd, 1975; Anderson and Kane, 1977). The second type focuses on the medical utilization patterns of migrant farm workers (Bleiweis, et al., 1977; Slesinger and Cautley, 1981). Some of these studies are descriptive in nature and their empirical data have been based on non-representative samples. Consequently, few multivariate models of migrant medical utilization patterns have been constructed. Furthermore, the relative importance of significant factors in relation to utilization behavior has not been systematically ascertained.

Since little systematic analysis of migrant health care has been undertaken, a brief review of general health literature may provide a foundation for the design of a multivariate study on the medical utilization patterns of migrant farm workers. For the general population, three major approaches have been followed to explain the complicated relationship between various determinants and the utilization of health services. The first approach, a social-psychological perspective, suggests that utilization behavior is primarily a function of knowledge and perceptions of vulnerability to disease, severity of a health problem, perceived benefits, and barriers to taking action. This approach uses social and behavioral attributes to predict individual utilization behavior (Rosenstock, 1966, 1969; Gochman, 1972; Becker, 1974, Yelin, et al., 1983; Zastowny, 1983). Furthermore, the psychological and cultural makeup of different racial and ethnic groups is considered to have

a major influence on their use of health services (Suchman, 1964; Zola, 1966; Fabrega and Roberts, 1972; Moody and Gray, 1972; Coburn and Pope, 1974; Hoppe and Heller, 1975; Dutton, 1983).

The second approach, a resource and opportunity perspective, claims that utilization behavior is largely a result of availability and accessibility of health services. This approach emphasizes the structural or contextual variables derived from organizational, economic and ecological frameworks. It attempts to establish functional relationships between ecological distance, economic costs, community resources and the recipients of health services (Weiss and Greenlick, 1970; Bashshur, et al., 1971; Gross, 1972; Riessman, 1974; Okada and Sparer, 1976; Williams, et al., 1983). In support of this perspective, a few studies specifically indicate that differences in utilization behavior tend to disappear when access to health services is substantially improved for disadvantaged groups (Greenlick, et al., 1972; Smith and Kaluzny, 1974; Reynolds, 1976; Zastowny, et al., 1983).

The third approach takes a holistic perspective that synthesizes the principal features of the other two approaches. In this approach, utilization behavior is a joint function of individual attributes and organizational factors. The holistic perspective emphasizes that health care study should be conducted with explicit concern for the economic, ecological and organizational contexts in which individual utilization behavior takes place (Bice and White, 1969; Andersen and Newman, 1973; Aday and Andersen, 1974; Wan and Soifer, 1974, 1975; Wolinsky, 1976; Davis and Marshall, 1979; Brook, et al., 1983).

Because of its comprehensiveness, the holistic approach has been followed in the present paper. The major purpose of this paper is to determine the significant factors affecting use or non-use of health services among migrant farm workers. The next section discusses the source of data. Section three describes the socioeconomic characteristics of migrant farm workers and identifies the three distinct

migrant groups (i.e., immigrants, recent migrants and long-term migrants). The fourth section develops a multiple regression model on visits to physicians so that the relative importance of the significant factors can be statistically determined. Section five examines the problems of delaying medical care or treatments, while the sixth section reports on respondents' subjective assessment of migrant health care in the community. The final section of the paper sets forth the implications and conclusions.

Data

The present study is based on data obtained from the New York Migrant Health Interview Survey conducted in Wayne County, New York in the summer of 1982. In order to obtain a representative sample of migrant farm workers from which to collect health statistics and related information, a special sampling procedure was designed for this survey. The first step was to compile a comprehensive list of addresses for all migrant camps and other migrant housing units in Wayne County. All units on the list were stratified according to the size of maximum capacity. The total number of migrants that could be accommodated in each size category was known. A representative sample of 218 migrants was randomly drawn through a three-stage sampling procedure from all size categories (the sample size was determined by budget constraints). Special efforts were made on October 21, 1982 to find out from owners of migrant camps and other housing units how many migrant workers were actually living in the units. On the assumption that the sampled migrants had characteristics similar to those of migrants enumerated on October 21, the interviewed migrants can be considered a representative sample of total migrant workers in Wayne County on that day (the detailed sampling procedure is described in Chi, 1984).

During the 1982 migrant health survey, seven Cornell undergraduate students were hired as interviewers, and one graduate student as project coordinator. All the interviewers had some survey experience through course work in Field Studies or in research methods. They were also trained in special

sessions designed for the migrant project. The project coordinator assigned sampled camps or housing units to interviewers and supervised their daily interview activities. Before the actual interviewing began, the coordinator sent letters to local growers, requesting permission for the interviewers to enter farms and to interview randomly selected migrants.

The survey instrument contained 113 items, covering the migrant farm worker's individual and family characteristics, his/her health habits and attitudes, health status, utilization of health services, home community characteristics and the physical environment of the current residence. Just before the scheduled interview period, a preliminary test of the questionnaire was conducted among ten migrant farm workers in the county and appropriate revisions were made.

Socioeconomic Characteristics of Migrant Farm Workers

Wayne County is one of the leading areas of Central New York in the production of apples, peaches and other fruits. Harvesting and processing these crops depends largely on the seasonal migration of farm workers. Out of the 218 respondents in our sample, 167 were born in the United States. In other words, 76.6 percent of the total sample were native-born Americans. Of the remaining 51 respondents, 44 percent reported that they were naturalized American citizens. Only 29 were either permanent residents of the United States or illegal aliens.

Although all migrant farm workers usually engage in similar farm work (harvesting fruit in the field or processing fruit in the canning plant), they are not a homogeneous social group. Previous studies have found that Black-American migrant farm workers differed from black immigrants in work conditions, work attitude, work productivity and mobility opportunities (Friedland, 1969; Nelkin, 1970; Friedland and Nelkin, 1971; Foner and Napoli, 1978).

In our Wayne County survey, three distinct migrant groups were identified. The first group consists of immigrants coming from Puerto Rico or from other countries (mostly from Haiti and Jamaica); the second group, recent migrants,

includes native-born farm workers who have made seasonal migrations to New York State for less than three years; and the third group, long-term migrants, comprises those native-born farm workers who have made a seasonal migration to New York State for three or more years. Table 1 shows the distribution of selected socioeconomic characteristics for these three groups.

The data indicate that recent migrants were significantly younger and had a higher educational level than long-term migrants. The former group had a higher proportion of single persons and had worked a shorter period of time as migrant workers than the latter group. In the immigrant group, over 90 percent were male, and this group had the lowest educational level of the three groups. Besides these differences, four additional observations are particularly worth pointing out. First, respondents in our sample had worked an average of 13.2 years as farm workers and also had worked over four years for the same employer. This persistent work history suggests that migrant farm workers, particularly long-term migrants who on the average had worked 7.24 years for the same employer, are loyal workers in agriculture and should be considered an integral part of the community rather than be treated as drifters. Second, over 48 percent of the immigrants were married (the highest proportion among the three groups); a large proportion of them had left their families at home and worked alone in New York. Third, since over 95 percent of the sample were blacks, no significant difference in racial composition was found. Fourth, no significant differences in average weekly wages and annual household income were found among the three groups (both F and X^2 are not significant). All groups earned the same level of average weekly wages in 1982 (around $212) and had similar annual household incomes in 1981. (Mean annual household income for the sample was $5,327, and over 60 percent of all migrant households earned less than $6,000.) Although these migrant groups have similar economic status and racial composition, they are quite distinct in other social and demographic characteristics. Therefore, migrant status (the classification of three migrant groups) will be a key variable in this study of the medical utilization patterns of migrant farm workers.

Factors Affecting Diagnostic and Preventive Medical Care

The migrant farm workers were asked to give information about their use of professional health care services and facilities, including visits to dentists, doctors and overnight stays in hospitals. In this section, visits to physicians will be analyzed in a multivariate model. The dependent variable is number of visits to a doctor's office or clinic during the past 12 months. The physician visits reported here included not only physical examination or immunization but also some sick visits in which patients were given shots, x-rays or medical tests. This question was designed to reflect the extent of diagnostic and preventive medical care.

In the health literature the independent variables used to predict utilization of health services have been broadly categorized into three dimensions: need for care, predisposition to use health services, and enabling factors (Andersen, 1968; Bice and White, 1969; Aday and Eichhorn, 1972; Purola, 1972; Wan and Soifer, 1975). The first dimension, need for care, represents the most important concern affecting a person's likelihood to seek medical care. It is usually measured by individually perceived symptoms of an illness, the individual's response and evaluation of its disabling effects, or by medical assessment of health status and physician-rated urgency of the condition. In this study, respondent's self-assessed health status two years ago is used to measure this dimension. It was hypothesized that the lower the health status two years ago, the more likely the migrant would be to visit a doctor for diagnostic and preventive care.

The predisposition to use health services, the second dimension, may be influenced by sociological and demographic variables such as age, sex, race-ethnicity, education, religion, family size and composition. It may also be affected by psychological variables, including attitudes and beliefs related to health care and skepticism about the value of health services or the medical profession. In this study, since over 95 percent of respondents are blacks, race is not included as an independent variable. Age, sex, marital status and educational level are the typical predisposing variables and are treated as independent

variables in our model. One unique variable, migrant status, represents membership in one of the three distinct migrant groups. Since, as indicated in the previous section, these migrant groups are quite heterogeneous in terms of sociological and demographic characteristics, it is appropriate to include migrant status in a multivariate analysis. Responses to the several psychological questions on health attitudes and beliefs asked in our survey were not used in the model because these responses reflected current psychological conditions. It is not logical to predict visits to physicians over the past year based on current attitudes, because current attitudes may be affected by earlier behavior.

The hypothesized relationships between these predisposing variables and the dependent variable are presented in Table 2. Since migrant status has never been used in previous studies, some additional discussion on this variable is needed. Of the three migrant groups, long-term migrants were chosen as a reference group for comparison; this group was the omitted category in the regression analysis. Since immigrants had the lowest educational level and were predominantly male (see Table 1), their level of visits to physicians was hypothesized to be lower than that of long-term migrants. Recent migrants had a higher level of education than long-term migrants (Table 1); they might therefore be expected to have a higher level of visits to physicians. However, recent migrants were also significantly younger (Table 1) than long-term migrants, so their need for diagnostic and preventive care might be less. As a result of these two opposing forces, it was hypothesized that the number of visits for recent migrants would not be significantly different from that of long-term migrants.

The third dimension, enabling factors, reflects the conditions that may either facilitate or impede an individual's decision to seek health care. These factors include family or individual resources (income and health insurance coverage), accessibility of health services (knowledge about health services, time and distance to health facilities), and characteristics of the health care system (methods of financing and organizational types of health providers). In the present analysis, household income, presence of Medicaid or other insurance,

and knowledge about the health center in Wayne County are the selected enabling factors. All these variables were hypothesized to have a positive relationship with visits to physicians.

Detailed measures of all dependent and independent variables used in the model are presented in Table 2. The method of analysis used in this study is the ordinary least squares (OLS) multiple regression. The results of regression analysis on diagnostic and preventive medical care are shown in Table 3. The relative importance of significant independent variables is determined in terms of standardized partial regression coefficients (β weights).

Table 3 shows that migrant farm workers in our sample made an average of 1.6 visits to doctors per year for diagnostic and preventive medical care (as shown by the mean value of the dependent variable). Of ten independent variables, only three were significantly related to variation in number of visits to physicians. First, female migrants visited doctors more frequently than their male counterparts. The same sex differential in medical utilization patterns has been consistently found in previous studies (Blackwell, 1963; Aday and Eichhorn, 1972). Second, immigrants visited doctors significantly less than long-term migrants (the omitted dummy category in the equation). This finding reflects the general ignorance of the preventive health concept among immigrants; they usually called upon the medical profession only when their illness symptoms reached crisis proportions. No significant difference was found between recent migrants and long-term migrants with respect to seeking diagnostic and preventive medical care. Third, having Medicaid insurance increased the likelihood of migrant farm workers visiting doctors for diagnostic and preventive health care, because Medicaid usually provides full payment of medical expenses. This finding is consistent with the result found in previous studies, in which Medicaid coverage was associated with increased utilization of health services in the general population (Okada and Wan, 1980). Of these three significant variables, the most important one related to visits to physicians is migrant status (it has the highest β weight, 0.216),

followed by Medicaid insurance and sex (their β weights are 0.183 and 0.156, respectively).

Problems of Delaying Medical Care or Treatments

An important aspect of medical care is prompt attention to existing health problems. Respondents were asked about types of health problems for which medical treatment had been postponed and reasons for the delay in seeking medical help (both were open-ended questions). Table 4 indicates that over 40 percent of total migrant farm workers in the sample put off receiving some kind of medical care or treatment for an existing health problem. Among those who delayed medical care or treatment, 53 percent of recent migrants and over 60 percent of long-term migrants reported delay in having dental work done, while 35 percent of immigrants postponed medical care for a variety of health problems, such as anemia, arthritis, blood in stools, high blood pressure, broken bones, cataracts, colds, headaches, nervousness, hernia, stomach ulcers, muscle contractions, etc. (All of these were grouped together as "others" for the analysis.) Twenty-three percent of immigrants and 21 percent of recent migrants reported that they put off treatments for a combination of medical problems, the most common of which were "eyes and dental work," "chest pains, colds and headaches." A relatively high proportion of immigrants (19 percent) indicated delaying regular physical check-ups.

Among reasons for delaying medical treatments, lack of time was the most important for immigrants (57 percent). Over 77 percent of recent migrants and 50 percent of long-term migrants cited both time and economic costs as reasons. It is interesting to note that one-quarter of all migrant farm workers expressed fear of the medical profession or disbelief in it as a reason for not seeking medical services. Statements made by some of the respondents are quite illuminating: "I am afraid of dentists," "Don't believe in doctors," "Don't like needles," "Don't like being cut into." These negative attitudes toward physicians and medical treatments were particularly strong among long-term migrants because they were older and less educated. Lack of accessibility, such as "no transportation," "poor communication with nurses," and "difficult to get an

appointment," was also considered by many migrants (particularly immigrants and long-term migrants) as a barrier that prevented them from utilizing medical services.

Knowledge and Utilization of Health Care in Wayne County

A special migrant health center was established in the town of Sodus some years ago. It was the only health center funded by the federal migrant health program in Wayne County. Its services were originally directed toward migrant farm workers and their families. Later, the U. S. Department of Health and Human Services decided to integrate its migrant health program with its community health program. The reasons for this action were, first, migrant farm workers and other rural poor have similar health-care needs and do not generally require different health services; second, both programs offer similar benefits; and third, using one center to serve migrant farm workers and other medically underserved persons in the same area is more economical and efficient than operating two separate centers (General Accounting Office, 1981). At the time of this study, the Sodus Health Center had been changed into a full-scale community health center and its services extended to the general population. Since the Center continued to receive both migrant and community health funds, migrant farm workers who sought medical care in the center only needed to pay a reduced rate ($3 per visit).

In our study, respondents were first asked whether they knew that a community health center existed in Wayne County. For those who did know, a second question was asked: "Have you or any of your household members ever used the medical services in the center during the past 12 months?" If the answer was positive, the respondent was asked to rate his or his family's experience with the center. The results of these questions are presented in Table 5. The data show that long-term migrants, as might be expected, were more knowledgeable about the center's existence than the other two groups, while immigrants were the least informed group. Of those who had knowledge about the community health center, over 60

percent of long-term migrants or their family members also had used the medical services of the center during the last year, but only one-third of immigrants had done so. Although the three migrant groups had different levels of knowledge and utilization of health care in Sodus Community Health Center, most migrants who had used the center's medical services rated their experience favorably and no significant differences were found among the migrant groups in their assessment of medical services received from the center (see Table 5).

Summary and Discussion

A representative sample of 218 migrant farm workers was randomly drawn in Wayne County, New York during the summer of 1982. Three distinct migrant groups were identified: immigrants, recent migrants and long-term migrants. Medical utilization patterns, including visits to physicians and use of medical services in the community health center, were compared among the three migrant groups. The focus was also placed on types of health problems for which medical treatment had been delayed, and the reasons for the delay were clearly identified.

Number of visits to physicians for diagnostic and preventive medical care was analyzed in a multivariate model. The results indicate that migrant status is the most important variable to explain variations in visits to physicians among migrant farm workers. Specifically, immigrants had a significantly lower level of visits than long-term migrants, while recent and long-term migrants had similar utilization patterns (see Table 3). Although the general health literature suggests that marital status, education and income may be the best predictors of utilization, these variables did not have any significant effects on migrants' number of visits to physicians in our model. This unexpected finding may result from two factors. First, most of the respondents in our sample had a similar level of income (see Table 1) and were very homogeneous in economic background; second, since migrant status reflects significant differences in age, marital status and education (see Table 1), the strong effect of migrant status on visits to physicians may have reduced the explanatory power of these traditional predisposing variables.

The model also indicated that Medicaid insurance had a significant positive effect on number of visits to physicians. It is reasonable to expect that an increase in visits to doctors may increase the probability of solving many untreated medical problems. Given the linkage between having Medicaid insurance, frequency of visiting physicians, and reduction of medical problems, however, the medical utilization patterns of migrant farm workers cannot be expected to improve spontaneously since less than 12 percent of migrants in our sample were covered by Medicaid insurance. Comprehensive health insurance coverage for all migrant farm workers, either under Medicaid or other well-designed programs, would be an important factor in making medical services available to them.

Another significant finding from the regression model is that visits of migrant farm workers to physicians vary with sex: female migrants tended to visit doctors more often than their male counterparts.

Based on the different patterns of visits to physicians found between men and women and between immigrants and native-born migrants, we may conclude that diagnostic and preventive medical care is particularly needed for male migrant farm workers in general and immigrants in particular. Data in Table 4 also indicated that dental care has been generally neglected by a large proportion of native-born migrants. Finally, the results in Table 5 showed that immigrants were least informed about the community health center and were less likely than other migrant groups to use its services. These findings provide public health professionals with an empirical basis to identify the target population for specific health service programs.

Although the multivariate model in general is significant in explaining variations in visits to physicians among migrant farm workers ($F=2.175$), the explained variance of the dependent variable is relatively low (adjusted $R^2=.0708$). Future studies should be extended to include other counties (such as Orange County, New York) in which Hispanic migrants are centered, so that racial and ethnic make-up may be used as a key independent variable in explaining medical utilization patterns.

Further, information on medical utilization should be collected in a longitudinal study. Responses to psychological questions on health attitudes and beliefs should be obtained prior to collecting data on visits to physicians so that such psychological measures can be incorporated in the multivariate causel model.

The data in Table 4 showed that a substantial proportion of migrant farm workers cited fear of medical practices and disbelief in the medical profession as reasons for delaying some medical treatments. To change these negative attitudes and perceptions, accurate materials on health care and proper health education programs are urgently needed. In several ways the Cooperative Extension services seem to be most appropriate for this task. Historically, they are devoted to public education, and they already enjoy a positive relationship with people and organizations in local areas. They are able to work with all socioeconomic groups and to reach out to migrant farm workers. Cooperative Extension has considerable expertise in delivering information and in using multiple teaching techniques. Migrant health education might be linked with existing Extension programs, for example, to develop a migrant health education program that involves 4-H youth through Extension.

Many respondents reported lack of time and lack of access as reasons for not seeking health care (see Table 4). Since migrant farm workers usually have a busy working schedule in the harvest season, special health services should be provided to them after working hours or during weekends. Appropriate actions to increase accessibility to the medical profession and health care facilities would include providing special transportation for migrant farm workers who live a long distance from the health center, speeding up medical appointments and shortening waiting time, and promoting communication between the medical profession and migrant workers.

Health care is a continuous process, but the seasonal mobility of migrant farm workers disrupts that continuity. Medicaid insurance may have the potential to

provide continuous health care for migratory farm workers, but only a small proportion of them (less than 12 percent in our sample) had actually benefited from the program. Recent federal health policy has emphasized the integration of migrant health programs with community health programs. However, jointly funded community health centers throughout the entire country are quite scarce (only 78 such centers were operating in 1979). Also, even though there was a jointly funded health center in our study area and 76 percent of migrant farm workers knew of its existence, only 42 percent of the total sample had used the center's services in 1981 (see Table 5). Moreover, at jointly funded centers, limited attention is being given to matching the level of funding and the level of services for migrants. For example, a recent government study reports that a Florida center had 62 percent of its funding from the federal migrant health program but that migrants made up only 43 percent of its patient load in 1979 (General Accounting Office, 1981). In order to provide comprehensive and continuous health care for migrant farm workers, a health voucher system should be considered as an alternative strategy. Health vouchers can be offered directly to eligible migrant farm workers, who may use the vouchers to purchase health services not only from community health centers but also from other health providers in the market. The health providers will be reimbursed by the federal migrant health fund. Further, migrant farm workers would be able to use health vouchers whenever and wherever they needed medical care. This system, in principle, would provide migrants with greater freedom to seek continuous health care. Further analysis of this alternative is definitely needed.

In sum, the results of the present study show conclusively that the provision of comprehensive health programs, removal of structural barriers in the health delivery system, and a program of migrant health education are the steps needed to alter the medical utilization behavior of migrant farm workers.

Table 1: Socioeconomic Characteristics of Migrant Farm Workers in Wayne County, New York, 1982

Characteristics	Total	Migrant Status		
		Immigrants	Recent Migrants	Long-term Migrants
1. Age				
$\bar{x}$	34.79	33.97	28.75	38.56
N	215	48	66	101
	F = 15.4	P < .001		
2. Education				
$\bar{x}$	9.46	7.60	11.32	9.29
N	214	47	66	101
	F = 25.32	P < .001		
3. No. of years worked as farmworkers				
$\bar{x}$	13.17	8.02	6.91	19.10
N	211	46	65	100
	F = 34.1	P < .001		
4. No. of years of farmwork for this employer				
$\bar{x}$	4.68	2.55	1.94	7.24
N	215	48	66	101
	F = 38.46	P < .001		
5. Weekly wages				
$\bar{x}$	$ 212.06	$ 248.02	$ 207.19	$ 191.42
N	131	33	36	62
	F = 2.02	P < .14		
6. Sex				
(1) Male	76.6	92.09	66.99	74.54
(2) Female	23.4	7.91	33.01	25.46
N	217	51	60	106
	x^2 = 10.14	P < .01		
7. Marital status				
(1) Single	39.16	31.18	63.30	29.49
(2) Married	37.25	48.05	15.27	44.36
(3) Other	23.59	20.77	21.43	26.15
N	217	51	60	106
	x^2 = 23.54	P <.001		
8. Total household income in 1981				
(1) 0-$3,000	31.43	23.35	42.00	29.08
(2) $3,001-$6,000	34.31	33.48	36.00	33.72
(3) $6,001-$9,000	21.58	27.00	14.32	23.26
(4) $9,001 and over	12.67	16.17	7.68	13.93
N	203	46	57	100
	x^2 = 7.062	P <0.32		

Table 2. Measurements and Hypothesized Relationships Between Dependent and Independent Variables Used in the Regression Analysis of Physician Visits

Description of Variables	Measurement	Hypothesized Relationship
Dependent Variable		
Physician Visits	No. of doctor visits for shots, x-rays, tests or examinations during the past 12 months	
Independent Variables		
Predisposition to use health services		
1. Age	range from 18 to 64	+
2. Sex	1 = male 0 = female	-
3. Marital Status	(one subcategory must be omitted in the equation)	
Single	1 = yes, 0 = no	-
Married	1 = yes, 0 = no	+
Others	1 = yes, 0 = no	*
4. Education	Highest grade completed in school	+
5. Migrant status	(one subcategory must be omitted in the equation)	
Immigrants	1 = yes, 0 = no	-
Recent migrants	1 = yes, 0 = no	- or +
Long-term migrants	1 = yes, 0 = no	*
Enabling Factors		
1. Household income	1981 nominal income in the following categories 1 = 0 - $ 3,000 2 = $ 3,001 - $ 6,000 3 = $ 6,001 - $ 9,000 4 = $ 9,001 - $12,000 5 = $12,001 - $15,000 6 = $15,001 - $20,000 7 = $20,001 - $25,000 8 = $25,001 - $30,000 9 = over $30,000	+
2. Medicaid	1 = yes, 0 = no	+
3. Other insurance	1 = yes, 0 = no	+
4. Knowledge about the health center in the community	1 = yes, 0 = no	+
Need for Care		
1. Self-assessed health status 2 years ago	1 = worse than today's health 0 = better than or same as today's health	+

* The missing subcategory in the equation will be used as a framework of reference for comparison with other subcategories.

Table 3: A Regression Analysis of Diagnostic and Preventive Medical Care for Migrant Farm Workers

Independent Variables	b	Standard Error	t	β
Predisposition to use Health Services				
1. Age	.0047	.0142	.334	
2. Sex	-.6750	.3271	-2.064*	.156
3. Marital Status				
Single	-.4689	.3662	-1.280	
Married	-.2948	.3609	-.817	
Others	---	---	---	
4. Education	-.0104	.0584	-.178	
5. Migrant Status				
Immigrant	-1.0210	.3983	-2.563**	.216
Recent Migrant	-.0783	.3596	-.218	
Long-term Migrant	---	---	---	
Enabling Factors				
1. Household Income	.1804	.1171	1.541	
2. Medicaid	1.1174	.4577	2.442**	.183
3. Other Insurance	.2701	.3133	.862	
4. Knowledge about Health Center	-.2357	.3455	-.682	
Need for Care				
1. Health Status 2 years ago	.1371	.3936	.348	
Constant Term	2.1485	1.0677	2.012*	
Mean (dependent variable)		1.639		
N		186		
R^2 (adjusted)		.0708		
F value		2.175**		

*statistically significant at 5% level
**statistically significant at 1% level

Table 4: Delay of Medical Care or Treatments by Migrant Status (column percentage)

Questions	Migrant Status			
	Total	Immigrants	Recent Migrants	Long-term Migrants
1. Is there some kind of care or treatment that you have put off even though you may still need it?				
(1) yes	41.37	35.39	50.92	38.90
(2) no	58.63	64.61	49.08	61.10
N	217	51	60	106
	x^2 = 3.26		P <.10	
2. What is this care or treatment for?				
(1) Dental work	49.59	17.24	52.75	60.10
(2) Eye problems	11.12	5.68	4.87	17.51
(3) Check-up	6.70	19.00	2.60	4.67
(4) Multiple medical problems	12.97	22.92	20.67	3.83
(5) Others	19.62	35.16	19.11	13.88
N	86	16	30	40
	x^2 = 19.82		P <.05	
3. Why have you put it off?				
(1) No time	32.83	57.09	40.31	17.90
(2) Cost too much	31.72	17.92	37.37	32.81
(3) Fear or disbelief of medical profession	24.95	12.83	19.10	33.99
(4) Lack of access to medical profession	10.49	12.15	3.19	15.30
N	85	15	30	40
	x^2 = 12.28		P <.05	

Table 5: Knowledge and Utilization of Community Health Center in Wayne County by Migrant Status (column percentage)

Knowledge and Utilization	Migrant Status			
	Total	Immigrants	Recent Migrants	Long-term Migrants
1. "Do you know whether there is a migrant health center in this Community?"				
(1) yes	76.34	54.96	70.86	89.59
(2) no	23.66	45.04	29.14	10.41
N	212	49	59	104
	x^2 = 23.61		P <.001	
2. "Have you or any of your household members ever used the medical services in the Center during the past 12 months?"				
(1) yes	53.35	36.19	49.01	60.76
(2) no	46.65	63.18	50.99	39.24
N	171	31	44	96
	x^2 = 6.06		P <.05	
3. "If yes, how would you rate your experience with the Center?"				
(1) very bad or poor	7.75	7.25	6.49	8.30
(2) fair	20.75	11.71	6.34	27.62
(3) good or excellent	71.50	81.04	87.17	64.08
N	91	10	22	59
	x^2 = 5.28		P <.25	

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